Type 2 diabetes mellitus (T2DM) is a rapidly evolving global health issue.

Diabetic Retinopathy (DR) is a common microvascular complication of diabetes.

The prevalence of DR in Singapore (25-35%) is higher than other Asian countries.

**OBJECTIVE**

To identify the total annual direct medical cost of DR, and factors influencing the cost

**METHODS**

**Study population and design**

Singapore Study of Macro-angiopathy and Microvascular Reactivity in Type 2 Diabetes (SMART2D): a cross-sectional study conducted between August 2011 and February 2014.

435 patients with gradable fundus photographs were used for analysis.

**Assessment of DR**

Non-mydriatic digital images of the retina for both eyes were taken using a retinal camera. Photographs were assessed for the presence and severity of DR in a masked fashion according to the Early Treatment Diabetic Retinopathy Study protocol based on the worst affected eye.

**Estimation of costs**

Medical costs before subsidy for inpatient admissions, outpatient visits (physician visit, medication, allied health (AH), investigation and others) and accident & emergency (A&E) visits for each patient from 2011 to 2014 were extracted from administrative database.

Expressed in year 2014 Singapore dollars.

Consumer price index to estimate values older than 2014.

**Statistical analysis**

Total cost was logarithmic transformation before analysis.

Linear regression analysis was used to evaluate predictors of the costs.

**CONCLUSIONS**

The total direct medical cost is higher in DR than no DR patients.

The severity of DR was associated with increased total direct medical costs.

Inpatient cost is the major component (54.6%) in DR patients.

Cost for outpatient (22.6%), investigation (21.5%) and medication (24.4%) are the major components in no DR patients.

Our results suggest that preventing progression of DR may reduce the economic burden of DR.

This research was supported by Singapore National Medical Research Council Grant PPG/AH(KTPH)/2011